



SEQUENCE LISTING

<110> AEROVANCE, INC.
Hall, Roderick L.
Poll, Christopher T.
Newton, Benjamin B.
Taylor, William J.A.

<120> Method For Accelerating The Rate Of Mucociliary Clearance

<130> AERO1120-1

<140> US 09/441,966
<141> 1999-11-17

<150> US 09/218,913
<151> 1998-12-22

<160> 106

<170> PatentIn version 3.1

<210> 1
<211> 179
<212> PRT
<213> Homo sapiens

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Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val
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Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr
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Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser
35 40 45

Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
50 55 60

Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp
65 70 75 80

Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp His Ser
85 90 95

Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr
100 105 110

Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg
115 120 125

Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn
 130 135 140

Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg Gln Gln
 145 150 155 160

Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu Ala Gly
 165 170 175

Ala Val Ser

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 <213> Homo sapiens

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 <222> (1)..(18)
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Leu Ala Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser
 20 25 30

Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn
 35 40 45

Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly
 50 55 60

Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala
 65 70 75 80

Thr Val Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala
 85 90 95

Ala Asp Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp
 100 105 110

His Ser Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala
 115 120 125

Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val
 130 135 140

Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn
 145 150 155 160

Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg
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Gln Gln Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu
 180 185 190

Ala Gly Ala Val Ser
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 <213> Homo sapiens

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Ser Met Pro Arg Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu
 20 25 30

Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys
 35 40 45

Glu Glu Cys Leu Lys Lys Cys Ala Thr Val Thr Glu Asn Ala Thr Gly
 50 55 60

Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp Ser Ser Val Pro Ser Ala
 65 70 75 80

Pro Arg Arg Gln Asp Ser Glu Asp His Ser Ser Asp Met Phe Asn Tyr
 85 90 95

Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala Ser
 100 105 110

Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn Phe
 115 120 125

Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu Glu
 130 135 140

Ala Cys Met Leu Arg Cys Phe Arg Gln
145 150

<210> 4
<211> 58
<212> PRT
<213> Homo sapiens

<400> 4

Ile His Asp Phe Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg Ala
1 5 10 15

Ser Met Pro Arg Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu
20 25 30

Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys
35 40 45

Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
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<212> PRT
<213> Homo sapiens

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Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro Arg
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Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly
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Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu
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Lys Lys Cys
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<212> PRT
<213> Homo sapiens

<400> 6

Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala
1 5 10 15

Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn
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Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu
 35 40 45

Glu Ala Cys Met Leu Arg Cys Phe Arg Gln
 50 55

<210> 7
 <211> 51
 <212> PRT
 <213> Homo sapiens

<400> 7

Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg
 1 5 10 15

Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly
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Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met
 35 40 45

Leu Arg Cys
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<210> 8
 <211> 92
 <212> PRT
 <213> Homo sapiens

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Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val
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Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr
 20 25 30

Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser
 35 40 45

Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
 50 55 60

Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp

65

70

75

80

Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser
 85 90

<210> 9
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 <212> DNA
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 <223> "n" is any nucleotide.

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 <223> "n" is any nucleotide.

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 <222> (707)..(707)
 <223> "n" is any nucleotide.

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 ctccatgcct aggtggtggt acaatgtcac tgacggatcc tgccagctgt ttgtgtatgg 180
 gggctgtgac ggaaacagca ataattacct gaccaaggag gagtgcctca agaaatgtgc 240
 cactgtcaca gagaatgccg cgggtgacct ggccaccagc aggaatgcag cggattcctc 300
 tgtcccaagt gctcccagaa ggcaggattc tgaagaccac tccagcgata tgttcaacta 360
 tgaagaatac tgcaccgccg acgcagtcac tgggccttgc cgtgcatact tcccacgctg 420
 gtactttgac gtggagagga actcctgcaa taacttcacg tatggaggct gccggggcaa 480
 taagaacagc taccgctctg aggaggcctg catgctccgc tgcttccgcc agcaggagaa 540
 tcctcccctg ccccttggtt caaagggtgt ggttctggcc ggggctgttt cgtgatgggtg 600
 ttgatccttt tcctggggag cntccatggt cttactgatt ccgggtggca aggaggaacc 660
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<210> 10
 <211> 197

<212> PRT
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<220>

<223> Amino acids -18 to 179 of the translation of the consensus DNA sequence in Fig. 3.

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Ala Gly Ser Phe Leu Ala Trp Leu Gly Ser Leu Leu Leu Ser Gly Val
 1 5 10 15

Leu Ala Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser
 20 25 30

Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn
 35 40 45

Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly
 50 55 60

Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala
 65 70 75 80

Thr Val Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala
 85 90 95

Ala Asp Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp
 100 105 110

His Ser Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala
 115 120 125

Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val
 130 135 140

Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn
 145 150 155 160

Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg
 165 170 175

Gln Gln Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu
 180 185 190

Ala Gly Ala Val Ser
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<210> 11
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 <223> Variants of human Bikunin.

<220>
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 <223> Each "Xaa" independently represents a naturally occurring amino acid residue except Cys, with the proviso that at least one "Xaa" in SEQ ID NO:11 is different from the corresponding amino acid residue of the native sequence.

<220>
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 <223> Each "Xaa" independently represents a naturally occurring amino acid residue except Cys, with the proviso that at least one "Xaa" in SEQ ID NO:11 is different from the corresponding amino acid residue of the native sequence.

<220>
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 <223> Each "Xaa" independently represents a naturally occurring amino acid residue except Cys, with the proviso that at least one "Xaa" in SEQ ID NO:11 is different from the corresponding amino acid residue of the native sequence.

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<220>
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 <223> Each "Xaa" independently represents a naturally occurring amino acid residue except Cys, with the proviso that at least one "Xaa" in SEQ ID NO:11 is different from the corresponding amino acid residue of the native sequence.

<220>
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<220>
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<222> (45)..(47)
<223> Each "Xaa" independently represents a naturally occurring amino acid residue except Cys, with the proviso that at least one "Xaa" in SEQ ID NO:11 is different from the corresponding amino acid residue of the native sequence.

<220>
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<222> (52)..(52)
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<220>
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<222> (64)..(64)
<223> Each "Xaa" independently represents a naturally occurring amino acid residue except Cys, with the proviso that at least one "Xaa" in SEQ ID NO:11 is different from the corresponding amino acid residue of the native sequence.

<220>
<221> MISC_FEATURE
<222> (103)..(103)
<223> Each "Xaa" independently represents a naturally occurring amino acid residue except Cys, with the proviso that at least one "Xaa" in SEQ ID NO:11 is different from the corresponding amino acid residue of the native sequence.

<220>
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<222> (112)..(112)
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<220>
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<223> Each "Xaa" independently represents a naturally occurring amino acid residue except Cys, with the proviso that at least one "Xaa" in SEQ ID NO:11 is different from the corresponding amino acid residue of the native sequence.

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<222> (116)..(121)
<223> Each "Xaa" independently represents a naturally occurring amino acid residue except Cys, with the proviso that at least one "Xaa" in SEQ ID NO:11 is different from the corresponding amino acid

residue of the native sequence.

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      residue of the native sequence.
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      residue of the native sequence.
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<400> 11
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Ala Asp Arg Glu Arg Ser Ile Xaa Asp Phe Cys Leu Val Ser Lys Val
1           5           10           15
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Xaa Gly Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Trp Trp Tyr Asn Val Thr
          20           25           30
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```
Asp Gly Ser Cys Gln Leu Phe Xaa Tyr Xaa Gly Cys Xaa Xaa Xaa Ser
          35           40           45
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Asn Asn Tyr Xaa Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Xaa
 50 55 60

Thr Glu Asn Ala Thr Gly Asp Leu Ser Thr Ser Arg Asn Ala Ala Asp
 65 70 75 80

Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu His Asp Ser
 85 90 95

Ser Asp Met Phe Asn Tyr Xaa Glu Tyr Cys Thr Ala Asn Ala Val Xaa
 100 105 110

Gly Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Trp Tyr Phe Asp Val Glu Arg
 115 120 125

Asn Ser Cys Asn Asn Phe Xaa Tyr Xaa Gly Cys Xaa Xaa Xaa Lys Asn
 130 135 140

Ser Tyr Xaa Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg Xaa Gln
 145 150 155 160

Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu Ala Gly
 165 170 175

Ala Val Ser

<210> 12
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 <212> DNA
 <213> Homo sapiens

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 <222> (367)..(367)
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 accgagaacg cagcatccac gacttctgcc tgggtgtcgaa ggtgggtgggc agattccggg 120
 cctccatgcc taggtgggtg tacaatgtca ctgacggatt ctgccagctg tttgtgtatg 180
 ggggctgtga cggaaacagc aataattacc tgaccaagga ggagtgcctc aagaaatgtg 240
 ccactgtcac agagaatgcc acgggtgacc tggccaccag caggaatgca gcggattcct 300
 ctgtcccaag tgctcccaga aggcaggatt cttgaagacc acttcagcga tatgtttcaa 360
 ntattgnaag aataattgca ccgncaacgn att 393

<210> 13
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 <222> (1)..(18)
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Trp	Pro	Ala	Asp	Arg	Glu	Arg	Ser	Ile	His	Asp	Phe	Cys	Leu	Val	Ser	20	25	30	
Lys	Val	Val	Gly	Arg	Phe	Arg	Ala	Ser	Met	Pro	Arg	Trp	Trp	Tyr	Asn	35	40	45	
Val	Thr	Asp	Gly	Ser	Cys	Gln	Leu	Phe	Val	Tyr	Gly	Gly	Cys	Asp	Gly	50	55	60	
Asn	Ser	Asn	Asn	Tyr	Leu	Thr	Lys	Glu	Glu	Cys	Leu	Lys	Lys	Cys	Ala	65	70	75	80
Thr	Val	Thr	Glu	Asn	Ala	Thr	Gly	Asp	Leu	Ala	Thr	Ser	Arg	Asn	Ala	85	90	95	
Ala	Asp	Ser	Ser	Val	Pro	Ser	Ala	Pro	Arg	Arg	Gln	Asp	Ser	100	105	110			

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 <211> 510
 <212> DNA
 <213> Homo sapiens

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 <223> "n" is any nucleotide.

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 <223> "n" is any nucleotide.

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 aaggcaggat tctgaagacc actccagcga tatgttcaac tatgaagaat actgcaccgc 180
 caacgcagtc actgggcctt gccgtgcac cttcccacgc tggtaactttg acgtggagag 240
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 ctcaaagggtg gtgggttctgg ccggggctgt ttcgtgatgg tgttgatcct tttcctgggg 420
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 ncgtctggag cttcggagat gacaagggnt 510

<210> 15
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 15

Leu Pro Asp Gln Gly Gly Val Pro Gln Glu Met Cys His Cys His Arg
 1 5 10 15

Glu Cys His Gly
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<210> 16
 <211> 427

<212> DNA
 <213> Homo sapiens

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 <223> "n" is any nucleotide.

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 <222> (425)..(425)
 <223> "n" is any nucleotide.

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 catgcctagg tgggtggtaca atgtcactga cggatcctgc cagctgtttg tgtatggggg 180
 ctgtgacgga aacagcaata attacctgac caaggaggag tgcctcaaga aatgtgccac 240
 tgtcacagag aatgccacgg gtgacctggc caccagcagg aatgcagcgg attcctctgt 300
 cccaagtgtc cccagaaggc aggattctga agaccactcc agcgatatgt tcaactatga 360
 agaatactgg caccgccaac gcattcactg ggctgcgtg catccttccc acgctgggtac 420
 tttgncg 427

<210> 17
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 <223> "n" is any nucleotide.

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 <222> (407)..(407)
 <223> "n" is any nucleotide.

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 aatgtcactg acggatcctg ccagctgttt gtgtatgggg gctgtgacgg aaacagcaat 180
 aattacctga ccaaggagga gtgcctcaag aaatgtgcca ctgtcacaga gaatgccacg 240
 ggtgacctgg ccaccagcag gaatgcagcg gattcctctg tcccaagtgc tcccagaagg 300
 caggattctg aagaccactc cagcgatatg ttcaactatg aagaatactg caccgccaac 360
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 aac 423

<210> 18
 <211> 57
 <212> PRT
 <213> Unknown

<220>
 <223> Kunitz-like domain of tissue factor pathway inhibitor precursor 1.

<400> 18

His Ser Phe Cys Ala Phe Lys Ala Asp Asp Gly Pro Cys Lys Ala Ile
 1 5 10 15

Met Lys Arg Phe Phe Phe Asn Ile Phe Thr Arg Gln Cys Glu Glu Phe
 20 25 30

Ile Tyr Gly Gly Cys Glu Gly Asn Gln Asn Arg Phe Glu Ser Leu Glu
 35 40 45

Glu Cys Lys Lys Met Cys Thr Arg Asp
 50 55

<210> 19
 <211> 57
 <212> PRT
 <213> Unknown

<220>

<223> Kunitz-like domain of tissue factor pathway inhibitor precursor 1.

<400> 19

Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys Arg Gly Tyr
 1 5 10 15

Ile Thr Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Arg Phe
 20 25 30

Lys Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu Glu
 35 40 45

Glu Cys Lys Asn Ile Cys Glu Asp Gly
 50 55

<210> 20

<211> 57

<212> PRT

<213> Unknown

<220>

<223> Kunitz-like domain of tissue factor pathway inhibitor precursor.

<400> 20

Pro Ser Trp Cys Leu Thr Pro Ala Asp Arg Gly Leu Cys Arg Ala Asn
 1 5 10 15

Glu Asn Arg Phe Tyr Tyr Asn Ser Val Ile Gly Lys Cys Arg Pro Phe
 20 25 30

Lys Tyr Ser Gly Cys Gly Gly Asn Glu Asn Asn Phe Thr Ser Lys Gln
 35 40 45

Glu Cys Leu Arg Ala Cys Lys Lys Gly
 50 55

<210> 21

<211> 57

<212> PRT

<213> Unknown

<220>

<223> Kunitz-like domain of tissue factor pathway inhibitor precursor 2.

<400> 21

Ala Glu Ile Cys Leu Leu Pro Leu Asp Tyr Gly Pro Cys Arg Ala Leu
 1 5 10 15

Leu Leu Arg Tyr Tyr Tyr Arg Tyr Arg Thr Gln Ser Cys Arg Gln Phe
20 25 30

Leu Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Tyr Thr Trp Glu
35 40 45

Ala Cys Asp Asp Ala Cys Trp Arg Ile
50 55

<210>	22
<211>	57
<212>	PRT
<213>	Unknown

<220>
<223> Kunitz-like domain of tissue factor pathway inhibitor precursor 2.

<400> 22

Pro Ser Phe Cys Tyr Ser Pro Lys Asp Glu Gly Leu Cys Ser Ala Asn
1 5 10 15

Val Thr Arg Tyr Tyr Phe Asn Pro Arg Tyr Arg Thr Cys Asp Ala Phe
20 25 30

Thr Tyr Thr Gly Cys Gly Gly Asn Asp Asn Asn Phe Val Ser Arg Glu
35 40 45

Asp Cys Lys Arg Ala Cys Ala Lys Ala
50 55

<210>	23
<211>	57
<212>	PRT
<213>	Unknown

<220>
<223> Kunitz-like domain of amyloid precursor protein homologue.

<400> 23

Lys Ala Val Cys Ser Gln Glu Ala Met Thr Gly Pro Cys Arg Ala Val
1 5 10 15

Met Pro Arg Thr Thr Phe Asp Leu Ser Lys Gly Lys Cys Val Arg Phe
20 25 30

Ile Thr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Glu Ser Glu Asp
35 40 45

Tyr Cys Met Ala Val Cys Lys Ala Met
50 55

<210> 24
<211> 58
<212> PRT
<213> Unknown

<220>
<223> Kunitz-like domain of aprotinin.

<400> 24

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala
1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
50 55

<210> 25
<211> 51
<212> PRT
<213> Unknown

<220>
<223> Kunitz-like domain of inter-alpha-trypsin inhibitor precursor.

<400> 25

Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Met Gly Met Thr Ser Arg
1 5 10 15

Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr Phe Gln Tyr Gly
20 25 30

Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu Lys Glu Cys Leu
35 40 45

Gln Thr Cys
50

<210> 26
<211> 57
<212> PRT
<213> Unknown

<220>

<223> Kunitz-like domain of inter-alpha-trypsin inhibitor precursor.

<400> 26

Val Ala Ala Cys Asn Leu Pro Ile Val Arg Gly Pro Cys Arg Ala Phe
 1 5 10 15

Ile Gln Leu Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu Phe
 20 25 30

Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu Lys
 35 40 45

Glu Cys Arg Glu Tyr Cys Gly Val Pro
 50 55

<210> 27

<211> 57

<212> PRT

<213> Unknown

<220>

<223> Kunitz-like domain of amyloid precursor protein.

<400> 27

Glu Val Cys Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala Met
 1 5 10 15

Ile Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro Phe
 20 25 30

Phe Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu Glu
 35 40 45

Tyr Cys Met Ala Val Cys Gly Ser Ala
 50 55

<210> 28

<211> 51

<212> PRT

<213> Unknown

<220>

<223> Kunitz-like domain of collagen alpha-3(VI) precursor.

<400> 28

Cys Lys Leu Pro Lys Asp Glu Gly Thr Cys Arg Asp Phe Ile Leu Lys
 1 5 10 15

Trp Tyr Tyr Asp Pro Asn Thr Lys Ser Cys Ala Arg Phe Trp Tyr Gly
 20 25 30

Gly Cys Gly Gly Asn Glu Asn Lys Phe Gly Ser Gln Lys Glu Cys Glu
 35 40 45

Lys Val Cys
 50

<210> 29
 <211> 57
 <212> PRT
 <213> Unknown

<220>
 <223> Kunitz-like domain of HKI-B9.

<400> 29

Pro Asn Val Cys Ala Phe Pro Met Glu Lys Gly Pro Cys Gln Thr Tyr
 1 5 10 15

Met Thr Arg Trp Phe Phe Asn Phe Glu Thr Gly Glu Cys Glu Leu Phe
 20 25 30

Ala Tyr Gly Gly Cys Gly Gly Asn Ser Asn Asn Phe Leu Arg Lys Glu
 35 40 45

Lys Cys Glu Lys Phe Cys Lys Phe Thr
 50 55

<210> 30
 <211> 46
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5' sense oligonucleotide used in Example 6.

<400> 30
 gccaaagcttg gataaaagat atgaagaata ctgcaccgcc aacgca

46

<210> 31
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3' antisense oligonucleotide used in Example 6.

<400> 31
 ggggatcctc actgctggcg gaagcagcgg agcat

35

<210> 32
 <211> 206
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Cloned bikunin cDNA fragment in Example 6.

<400> 32
 ccaagcttgg ataaaagata tgaagaatac tgcaccgcca acgcagtcac tgggccttgc 60
 cgtgcatcct tcccacgctg gtactttgac gtggagagga actcctgcaa taacttcac 120
 tatggaggct gccggggcaa taagaacagc taccgctctg aggaggcctg catgctccgc 180
 tgcttccgcc agcagtgagg atcccc 206

<210> 33
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3' PCR primer used to amplify EST R74593.

<400> 33
 cgaagcttca tctccgaagc tccagacg 28

<210> 34
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5' PCR primer used to amplify EST R74593.

<400> 34
 aggatctaga caataattac ctgaccaagg a 31

<210> 35
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5' PCR primer used to amplify EST R35464.

<400> 35
 ggtctagagg ccgggtcggt tctcgcttgg ctggga 36

<210> 36
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>

<223> 5' PCR primer used to amplify EST R34808.

<400> 36
cacctgatcg cgagacccc 19

<210> 37
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Vector specific DNA sequencing primer (SP6).

<400> 37
gatttaggtg acactatag 19

<210> 38
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Vector specific DNA sequencing primer (T7).

<400> 38
taatacgact cactataggg 20

<210> 39
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Gene specific DNA sequencing primer.

<400> 39
ttacctgacc aaggaggagt gc 22

<210> 40
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Gene specific DNA sequencing primer.

<400> 40
aatccgctgc attcctgctg gtg 23

<210> 41
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Gene specific DNA sequencing primer.

<400> 41
 cagtcactgg gccttgccgt 20

<210> 42
 <211> 105
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5' sense oligonucleotide used in Example 5.

<400> 42
 gaaggggtaa gcttggataa aagatatgaa gaatactgca ccgccaacgc agtcactggg 60
 ccttgccgtg catccttccc acgctggtac ttgacgtgg agagg 105

<210> 43
 <211> 129
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3' antisense oligonucleotide used in Example 5.

<400> 43
 cgcgatccc tactggcgga agcagcggag catgcaggcc tcctcagagc ggtagctgtt 60
 cttattgccc cggcagcctc catagatgaa gttattgcag gagttcctct ccacgtcaaa 120
 gtaccagcg 129

<210> 44
 <211> 207
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Cloned bikunin fragment in Example 5.

<400> 44
 gaaggggtaa gcttggataa aagatatgaa gaatactgca ccgccaacgc agtcactggg 60
 ccttgccgtg catccttccc acgctggtac ttgacgtgg agaggaactc ctgcaataac 120
 ttcattatg gaggtgccc gggcaataag aacagctacc gctctgagga ggcctgcatg 180
 ctccgctgct tccgccagta gggatcc 207

<210> 45
 <211> 248
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> EST derived consensus sequence of human Bikunin (Figs. 4D and 4G).

<220>
 <221> SIGNAL
 <222> (1) .. (23)
 <223>

<400> 45

Met Leu Arg Ala Glu Ala Asp Gly Val Ser Arg Leu Leu Gly Ser Leu
 1 5 10 15

Leu Leu Ser Gly Val Leu Ala Ala Asp Arg Glu Arg Ser Ile His Asp
 20 25 30

Phe Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro
 35 40 45

Arg Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr
 50 55 60

Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys
 65 70 75 80

Leu Lys Lys Cys Ala Thr Val Thr Glu Asn Ala Thr Gly Asp Leu Ala
 85 90 95

Thr Ser Arg Asn Ala Ala Asp Ser Ser Val Pro Ser Ala Pro Arg Arg
 100 105 110

Gln Asp Ser Glu Asp His Ser Ser Asp Met Phe Asn Tyr Glu Glu Tyr
 115 120 125

Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg
 130 135 140

Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly
 145 150 155 160

Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met
 165 170 175

Leu Arg Cys Phe Arg Gln Gln Glu Asn Pro Pro Leu Pro Leu Gly Ser
 180 185 190

Lys Val Val Val Leu Ala Gly Leu Phe Val Met Val Leu Ile Leu Phe
 195 200 205

Leu Gly Ala Ser Met Val Tyr Leu Ile Arg Val Ala Arg Arg Asn Gln

210	215	220	
Glu Arg Ala Leu Arg Thr Val Trp Ser Ser Gly Asp Asp Lys Glu Gln			
225	230	235	240

Leu Val Lys Asn Thr Tyr Val Leu

245

<210> 46
 <211> 782
 <212> DNA
 <213> Homo sapiens

<400> 46
 acctgatcgc gagaccccaa cggctggtgg cgtcgctgc gcgtctcggc tgagctggcc 60
 atggcgcagc tgtgcgggct gaggcggagc cgggcgtttc tcgccctgct gggatcgcctg 120
 ctctctctctg gggctcctggc ggccgaccga gaacgcagca tccacgactt ctgcctgggtg 180
 tcgaaggtgg tgggcagatg ccgggcctcc atgcctaggt ggtggtacaa tgtcactgac 240
 ggatcctgcc agctgtttgt gtatgggggc tgtgacggaa acagcaataa ttacctgacc 300
 aaggaggagt gcctcaagaa atgtgccact gtcacagaga atgccacggg tgacctggcc 360
 accagcagga atgcagcggg ttcctctgtc ccaagtgtc ccagaaggca ggattctgaa 420
 gaccactcca gcgatatgtt caactatgaa gaatactgca ccgccaacgc agtcactggg 480
 ccttgccgtg catccttccc acgctggtac tttgacgtgg agaggaactc ctgcaataac 540
 ttcattctatg gaggctgccg gggcaataag aacagctacc gctctgagga ggcctgcatg 600
 ctccgctgct tccgccagca ggagaatcct ccctgcccc ttggctcaaa ggtggtggtt 660
 ctggcggggc tgttcgtgat ggtgttgatc ctcttctctg gagcctccat ggtctacctg 720
 atccgggtgg cacggaggaa ccaggagcgt gccctgcgca ccgtctggag cttcggagat 780
 ga 782

<210> 47
 <211> 240
 <212> PRT
 <213> Homo sapiens

<220>
 <221> SIGNAL
 <222> (1) .. (27)
 <223>

<400> 47

Met Ala Gln Leu Cys Gly Leu Arg Arg Ser Arg Ala Phe Leu Ala Leu		
1	5	10

Leu Gly Ser Leu Leu Leu Ser Gly Val Leu Ala Ala Asp Arg Glu Arg
 20 25 30

Ser Ile His Asp Phe Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg
 35 40 45

Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln
 50 55 60

Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr
 65 70 75 80

Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val Thr Glu Asn Ala Thr
 85 90 95

Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp Ser Ser Val Pro Ser
 100 105 110

Ala Pro Arg Arg Gln Asp Ser Glu Asp His Ser Ser Asp Met Phe Asn
 115 120 125

Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala
 130 135 140

Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn
 145 150 155 160

Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu
 165 170 175

Glu Ala Cys Met Leu Arg Cys Phe Arg Gln Gln Glu Asn Pro Pro Leu
 180 185 190

Pro Leu Gly Ser Lys Val Val Val Leu Ala Gly Leu Phe Val Met Val
 195 200 205

Leu Ile Leu Phe Leu Gly Ala Ser Met Val Tyr Leu Ile Arg Val Ala
 210 215 220

Arg Arg Asn Gln Glu Arg Ala Leu Arg Thr Val Trp Ser Phe Gly Asp
 225 230 235 240

<210> 48

<211> 1544

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1358)..(1358)

<223> "n" is any nucleotide.

<400> 48

gcacgagttg ggaggtgtag cgcggctctg aacgcgctga gggccgttga gtgtcgcagg	60
cggcgagggc gcgagtgagg agcagaccca ggcacgcgc gccgagaagg cggggcgctcc	120
ccacactgaa ggtccggaag ggcgacttcc gggggctttg gcacctggcg gacctctccg	180
gagcgtcggc acctgaacgc gaggcgctcc attgcgcgtg cgcgttgagg ggcttcccgc	240
acctgatcgc gagaccccaa cggctggtgg cgtcgctgc gcgtctcggc tgagctggcc	300
atggcgcagc tgtgcgggct gaggcggagc cgggcgtttc tcgccctgct gggatcgctg	360
ctcctctctg gggctctggc ggccgaccga gaacgcagca tccacgactt ctgcctggtg	420
tcgaagggtg tgggcagatg ccgggcctcc atgcctaggt ggtggtacaa tgtcactgac	480
ggatcctgcc agctgtttgt gtatgggggc tgtgacggaa acagcaataa ttacctgacc	540
aaggaggagt gcctcaagaa atgtgccact gtcacagaga atgccacggg tgacctggcc	600
accagcagga atgcagcgga ttctctctgt ccaagtgtc ccagaaggca ggattctgaa	660
gaccactcca gcgatatgtt caactatgaa gaatactgca ccgccaacgc agtcactggg	720
ccttgccgtg catccttccc acgctggtac tttgacgtgg agaggaactc ctgcaataac	780
ttcatctatg gaggtctgcc gggcaataag aacagctacc gctctgagga ggcttgcatt	840
ctccgctgct tccgccagca ggagaatcct ccctgcccc ttgggtcaaa ggtggtggtt	900
ctggcggggc tgttcgtgat ggtgttgatc ctcttctctg gagcctccat ggtctacctg	960
atccgggtgg cacggaggaa ccaggagcgt gccctgcga ccgtctggag ctccggagat	1020
gacaaggagc agctggtgaa gaacacatat gtctgtgac cgcctgtcg ccaagaggac	1080
tggggaaggg aggggagact atgtgtgagc tttttttaa tagagggatt gactcggatt	1140
tgagtgatca ttagggctga ggtctgtttc tctgggaggt aggacggctg ctctctggtc	1200
tggcagggat gggtttgctt tggaaatcct ctaggaggct cctcctcgca tggcctgcag	1260
tctggcagca gccccgagtt gtttcctcgc tgatcgattt ctttctcca ggtagagttt	1320
tctttgctta tgttgaaatt cattgcctcc ttttctcnat cacagaagtg atgttggaat	1380
cgtttctttt gtttgtctga tttatggttt ttttaagtat aaacaaaagt tttttattag	1440
cattctgaaa gaaggaaagt aaaatgtaca agtttaataa aaaggggcct tcccctttag	1500
aataaatttc cagcatgttg ctttcaaaaa aaaaaaaaaa aaaa	1544

<210> 49
 <211> 252
 <212> PRT
 <213> Homo sapiens

<220>
 <221> SIGNAL
 <222> (1)..(27)
 <223>

<400> 49

Met Ala Gln Leu Cys Gly Leu Arg Arg Ser Arg Ala Phe Leu Ala Leu
 1 5 10 15

Leu Gly Ser Leu Leu Leu Ser Gly Val Leu Ala Ala Asp Arg Glu Arg
 20 25 30

Ser Ile His Asp Phe Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg
 35 40 45

Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln
 50 55 60

Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr
 65 70 75 80

Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val Thr Glu Asn Ala Thr
 85 90 95

Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp Ser Ser Val Pro Ser
 100 105 110

Ala Pro Arg Arg Gln Asp Ser Glu Asp His Ser Ser Asp Met Phe Asn
 115 120 125

Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala
 130 135 140

Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn
 145 150 155 160

Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu
 165 170 175

Glu Ala Cys Met Leu Arg Cys Phe Arg Gln Gln Glu Asn Pro Pro Leu
 180 185 190

Pro Leu Gly Ser Lys Val Val Val Leu Ala Gly Leu Phe Val Met Val
 195 200 205

Leu Ile Leu Phe Leu Gly Ala Ser Met Val Tyr Leu Ile Arg Val Ala
 210 215 220

Arg Arg Asn Gln Glu Arg Ala Leu Arg Thr Val Trp Ser Ser Gly Asp
 225 230 235 240

Asp Lys Glu Gln Leu Val Lys Asn Thr Tyr Val Leu
 245 250

<210> 50
 <211> 146
 <212> PRT
 <213> Homo sapiens

<400> 50

Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro Arg
 1 5 10 15

Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly
 20 25 30

Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu
 35 40 45

Lys Lys Cys Ala Thr Val Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr
 50 55 60

Ser Arg Asn Ala Ala Asp Ser Ser Val Pro Ser Ala Pro Arg Arg Gln
 65 70 75 80

Asp Ser Glu Asp His Ser Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys
 85 90 95

Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp
 100 105 110

Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly
 115 120 125

Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu
 130 135 140

Arg Cys

145

<210> 51
 <211> 1530
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Consensus bikunin sequence of Fig. 4C.

<220>
 <221> misc_feature
 <222> (46)..(46)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (117)..(117)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (313)..(313)
 <223> "n" is any nucleotide.

<400> 51
 gcgacctccg cgcgttggga ggtgtagcgc ggctctgaac gcgtgnaggg ccgttgagtg 60
 tcgcaggcgg cgagggcgcg agtgaggagc agaccagggc atcgcgcgcc gagaagnccg 120
 gcgtccccac actgaaggtc cggaaaggcg acttccgggg gctttggcac ctggcgggacc 180
 ctcccggagc gtcggcacct gaacgcgagg cgctccattg cgcgtgcggt tgaggggctt 240
 cccgcacctg atcgcgagac cccaacggct ggtggcgctc ctgcgcgtct cggctgagct 300
 ggccatggcg cantgttgcg ggctgaggcg gacggcgttt ctgcctgct gggatcgctg 360
 ctctctctg gggctctggc ggccgaccga gaacgcagca tccacgactt ctgcctgggtg 420
 tcgaagggtg tgggcagatg ccgggcctcc atgcctaggt ggtggtacaa tgtcactgac 480
 ggatcctgcc agctgtttgt gtatgggggc tgtgacggaa acagcaataa ttacctgacc 540
 aaggaggagt gcctcaagaa atgtgccact gtcacagaga atgccacggg tgacctggcc 600
 accagcagga atgcagcgga ttcctctgtc ccaagtgtc ccagaaggca ggattctgaa 660
 gaccactcca gcgatatgtt caactatgaa gaatactgca ccgccaacgc agtcactggg 720
 ccttgccgtg catccttccc acgctggtag ttgacgtgg agaggaactc ctgcaataac 780
 ttcacttatg gaggtgccc gggcaataag aacagctacc gctctgagga ggctgcatg 840
 ctccgctgct tccgccagca ggagaatcct ccctgcccc ttggctcaaa ggtggtggtt 900
 ctggcggggc tgttcgtgat ggtgttgatc ctcttctgg gagcctccat ggtctacctg 960

```

atccgggtgg cacggaggaa ccaggagcgt gccctgcgca ccgtctggag ctccggagat 1020
gacaaggagc agctggtgaa gaacacatat gtctgtgac cgcctgtcg ccaagaggac 1080
tggggaaggg aggggagact atgtgtgagc tttttttaa tagagggatt gactcggatt 1140
tgagtgatca ttagggctga ggtctgttct tctgggaggt aggacggctg cttcctggtc 1200
tggcagggat gggtttgctt tggaaatcct ctaggaggt cctcctcgca tggcctgcag 1260
tctggcagca gccccgagtt gtttcctcgc tgatcgattt ctttcctcca ggtagagttt 1320
tctttgctta tgttgaattc cattgcctct tttctcatca cagaagtgat gttggaatcg 1380
tttcttttgt ttgtctgatt tatggttttt ttaagtataa acaaaagttt tttattagca 1440
ttctgaaaga aggaaagtaa aatgtacaag tttaataaaa aggggccttc ccctttagaa 1500
taaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1530

```

```

<210> 52
<211> 170
<212> PRT
<213> Homo sapiens

```

```

<400> 52

```

```

Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val
1           5           10           15

```

```

Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr
          20           25           30

```

```

Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser
          35           40           45

```

```

Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
50           55           60

```

```

Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp
65           70           75           80

```

```

Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp His Ser
          85           90           95

```

```

Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr
          100          105          110

```

```

Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg
          115          120          125

```

Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn
 130 135 140

Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg Gln Gln
 145 150 155 160

Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys
 165 170

<210> 53
 <211> 27
 <212> PRT
 <213> Homo sapiens

<400> 53

Met Ala Gln Leu Cys Gly Leu Arg Arg Ser Arg Ala Phe Leu Ala Leu
 1 5 10 15

Leu Gly Ser Leu Leu Leu Ser Gly Val Leu Ala
 20 25

<210> 54
 <211> 23
 <212> PRT
 <213> Homo sapiens

<400> 54

Met Leu Arg Ala Glu Ala Asp Gly Val Ser Arg Leu Leu Gly Ser Leu
 1 5 10 15

Leu Leu Ser Gly Val Leu Ala
 20

<210> 55
 <211> 102
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5' sense oligonucleotide used for construct #2 in Example 5.

<400> 55
 gaaggggtaa gcttggataa aagagaagaa tactgtactg ctaatgctgt tactgggtcca 60
 tgtagagctt cttttccaag atggtacttt gatgttgaaa ga 102

<210> 56
 <211> 129
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3' antisense oligonucleotide used for construct #2 in Example 5.

<400> 56
 actggatcct cattggcgaa aacatctcaa catacaggct tcttcagatc tgtaagaatt 60
 tttattacct ctacaaccac cgtaaataaa attattacaa gaatttcttt caacatcaaa 120
 gtaccatct 129

<210> 57
 <211> 108
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5' sense oligonucleotide used for construct #3 in Example 5.

<400> 57
 gaaggggtaa gcttggataa aagaaattac gaagaatact gtactgctaa tgctgttact 60
 ggtccatgta gagcttcttt tccaagatgg tactttgatg ttgaaaga 108

<210> 58
 <211> 117
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5' sense oligonucleotide used for construct #4 in Example 5.

<400> 58
 gaaggggtaa gcttggataa aagagatatg tttaattacg aagaatactg tactgctaat 60
 gctgttactg gtccatgtag agcttctttt ccaagatggg actttgatgt tgaaaga 117

<210> 59
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sense oligonucleotide used in PCR in Example 8.

<400> 59
 cacctgatcg cgagacccc 19

<210> 60
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense oligonucleotide used in PCR in Example 8.

<400> 60
 ctggcggaag cagcggagca tgc 23

<210> 61
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide used in in vitro mutagenesis in Example 9.

<400> 61
 cgcgtctcgg ctgacctggc cctgcagatg gcgcacgtgt gcggg 45

<210> 62
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide used in in vitro mutagenesis in Example 9.

<400> 62
 ctgccccttg gctcaaagta ggaagatctt cccccgggg ggggtggttct ggcggggctg 60

<210> 63
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 63

Leu Arg Cys Phe Arg Gln Gln Glu Asn Pro Pro Pro Leu Gly
 1 5 10

<210> 64
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 64

Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val
 1 5 10 15

Val Gly Arg Cys
 20

<210> 65
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 65

Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys
 1 5 10 15

Arg Ala Ser Phe
20

<210> 66
<211> 11
<212> PRT
<213> Homo sapiens

<400> 66

Pro Arg Tyr Val Asp Gly Ser Gln Phe Tyr Gly
1 5 10

<210> 67
<211> 55
<212> PRT
<213> Homo sapiens

<400> 67

Val Val Val Leu Ala Gly Leu Phe Val Met Val Leu Ile Leu Phe Leu
1 5 10 15

Gly Ala Ser Met Val Tyr Leu Ile Arg Val Ala Arg Arg Asn Gln Glu
20 25 30

Arg Ala Leu Arg Thr Val Trp Ser Ser Gly Asp Asp Lys Glu Gln Leu
35 40 45

Val Lys Asn Thr Tyr Val Leu
50 55

<210> 68
<211> 43
<212> PRT
<213> Homo sapiens

<400> 68

Val Val Val Leu Ala Gly Leu Phe Val Met Val Leu Ile Leu Phe Leu
1 5 10 15

Gly Ala Ser Met Val Tyr Leu Ile Arg Val Ala Arg Arg Asn Gln Glu
20 25 30

Arg Ala Leu Arg Thr Val Trp Ser Phe Gly Asp
35 40

<210> 69
<211> 55

<212> PRT
 <213> Homo sapiens

<400> 69

Val Val Val Leu Ala Gly Leu Phe Val Met Val Leu Ile Leu Phe Leu
 1 5 10 15

Gly Ala Ser Met Val Tyr Leu Ile Arg Val Ala Arg Arg Asn Gln Glu
 20 25 30

Arg Ala Leu Arg Thr Val Trp Ser Ser Gly Asp Asp Lys Glu Gln Leu
 35 40 45

Val Lys Asn Thr Tyr Val Leu
 50 55

<210> 70
 <211> 213
 <212> PRT
 <213> Homo sapiens

<400> 70

Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val
 1 5 10 15

Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr
 20 25 30

Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser
 35 40 45

Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
 50 55 60

Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp
 65 70 75 80

Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp His Ser
 85 90 95

Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr
 100 105 110

Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg
 115 120 125

Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn

130 135 140
 Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg Gln Gln
 145 150 155 160
 Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu Ala Gly
 165 170 175
 Leu Phe Val Met Val Leu Ile Leu Phe Leu Gly Ala Ser Met Val Tyr
 180 185 190
 Leu Ile Arg Val Ala Arg Arg Asn Gln Glu Arg Ala Leu Arg Thr Val
 195 200 205
 Trp Ser Phe Gly Asp
 210
 <210> 71
 <211> 225
 <212> PRT
 <213> Homo sapiens
 <400> 71
 Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val
 1 5 10 15
 Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr
 20 25 30
 Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser
 35 40 45
 Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
 50 55 60
 Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp
 65 70 75 80
 Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp His Ser
 85 90 95
 Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr
 100 105 110
 Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg
 115 120 125

Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn
 130 135 140

Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg Gln Gln
 145 150 155 160

Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu Ala Gly
 165 170 175

Leu Phe Val Met Val Leu Ile Leu Phe Leu Gly Ala Ser Met Val Tyr
 180 185 190

Leu Ile Arg Val Ala Arg Arg Asn Gln Glu Arg Ala Leu Arg Thr Val
 195 200 205

Trp Ser Ser Gly Asp Asp Lys Glu Gln Leu Val Lys Asn Thr Tyr Val
 210 215 220

Leu
 225

<210> 72
 <211> 19
 <212> PRT
 <213> Homo sapiens

<220>
 <221> MISC_FEATURE
 <222> (9)..(9)
 <223> "Xaa" is Ile, Thr, Asn, or Ser.

<220>
 <221> MISC_FEATURE
 <222> (11)..(11)
 <223> "Xaa" is Val, Ala, Glu, or Gly.

<220>
 <221> MISC_FEATURE
 <222> (17)..(17)
 <223> "Xaa" is Ser, Pro, Thr, or Ala.

<220>
 <221> MISC_FEATURE
 <222> (19)..(19)
 <223> "Xaa" is Tyr, His, Asn, or Asp.

<400> 72

Arg Pro Leu Gln Arg Tyr Val Ser Xaa Ile Xaa Arg Ile Ile Ala Pro

1 5 10 15

Xaa Thr Xaa

<210> 73
 <211> 108
 <212> PRT
 <213> Homo sapiens

<400> 73

Pro Gly His Gln Gln Glu Cys Ser Gly Phe Leu Cys Pro Lys Ser Pro
 1 5 10 15

Arg Arg Gln Asp Ser Glu Asp His Ser Ser Asp Met Phe Asn Tyr Glu
 20 25 30

Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala Ser Phe
 35 40 45

Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn Phe Ile
 50 55 60

Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu Glu Ala
 65 70 75 80

Cys Met Leu Arg Cys Phe Arg Gln Gln Glu Asn Pro Pro Leu Pro Leu
 85 90 95

Gly Ser Lys Val Val Val Leu Ala Gly Ala Val Ser
 100 105

<210> 74
 <211> 31
 <212> PRT
 <213> Homo sapiens

<220>
 <221> MISC_FEATURE
 <222> (25)..(25)
 <223> "Xaa" is Asp or Glu.

<400> 74

Ser Phe Ser Trp Gly Ala Ser Met Val Leu Leu Ile Pro Gly Gly Lys
 1 5 10 15

Glu Glu Pro Gly Ala Cys Pro Ala Xaa Arg Leu Glu Leu Arg Arg
 20 25 30

<210> 75
 <211> 511
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Corrected version of EST R74593 (Fig. 3).

<220>
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 <222> (425)..(425)
 <223> "n" is any nucleotide.

<220>
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 <222> (482)..(482)
 <223> "n" is any nucleotide.

<220>
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 <222> (510)..(510)
 <223> "n" is any nucleotide.

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<400> 75
gcaataatta cctgaccaag gaggagtgcc tcaagaaatg tgccactgtc acagagaatg      60
ccacgggtga cctggccacc agcaggaatg cagcggattc ctctgtccca agtgctccca      120
gaaggcagga ttctgaagac cactccagcg atatgttcaa ctatgaagaa tactgcaccg      180
ccaacgcagt cactgggcct tgccgtgcat ccttcccacg ctggtacttt gacgtggaga      240
ggaactcctg caataacttc atctatggag gctgccgggg caataagaac agctaccgct      300
ctgaggaggc ctgcatgctc cgctgcttcc gccagcagga gaatcctccc ctgccccttg      360
gctcaaaggt ggtggttctg gccggggctg tttcgtgatg gtggtgatcc ttttcctggg      420
gagcntccat ggtcttactg attccgggtg gcaaggagga accaggagcg tgccctgcgg      480
ancgtctgga gcttcggaga tgacaagggn t                                     511

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<210> 76
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Amino acids 184-214 of the translation of the consensus DNA sequence in Fig. 3.

<220>
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 <222> (25)..(25)
 <223> "Xaa" is Asp or Glu.

<400> 76

Ser Phe Ser Trp Gly Ala Ser Met Val Leu Leu Ile Pro Gly Gly Lys
1 5 10 15

Glu Glu Pro Gly Ala Cys Pro Ala Xaa Arg Leu Glu Leu Arg Arg
20 25 30

<210> 77

<211> 312

<212> DNA

<213> Homo sapiens

<220>

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<222> (45)..(45)

<223> "n" is any nucleotide.

<220>

<221> misc_feature

<222> (49)..(49)

<223> "n" is any nucleotide.

<220>

<221> misc_feature

<222> (118)..(118)

<223> "n" is any nucleotide.

<220>

<221> misc_feature

<222> (231)..(231)

<223> "n" is any nucleotide.

<220>

<221> misc_feature

<222> (305)..(305)

<223> "n" is any nucleotide.

<400> 77

gcgacctcgc cgcgttgga ggtgtagcgc ggctctgaac gcgtngagng gccgttgagt 60

gtcgcaggcg gcgagggcgc gagtgaggag cagaccagg catcgcgcg cgagaagncg 120

ggcgccccca cactgaaggt ccggaaaggc gacttcggg ggctttggca cctggcggac 180

cctcccggag cgtcggcacc tgaacgcgag gcgctccatt gcgcgtgcgt ntgaggggct 240

tcccgcacct gatcgcgaga cccaacggc tgggtggcgt gcctgcgcgt ctcggctgag 300

ctggncatgt cg 312

<210> 78
 <211> 330
 <212> DNA
 <213> Homo sapiens

<220>
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 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (123)..(123)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (321)..(321)
 <223> "n" is any nucleotide.

<400> 78
 gcgacctcgc cgcggttgga ggtgtagcgc ggctctgaac gcgtgcaggg ccggttgagtg 60
 tcgcaggcgc cgagggcgcg agtgaggagc agaccaggc atcgcgcgcc gagaagncgg 120
 gentccccac actgaaggtc cggaaaggcg acttccgggg gctttggcac ctggcggacc 180
 ctcccggagc gtggcacctg aacgcgaggc gctccattgc gcgtgcgttt gaggggcttc 240
 ccgcacctga tcgcgagacc ccaacggctg gtggcgctgc ctgcgcgtct cggctgagct 300
 ggccatggcg cactgtgcgg ngctgaggcg 330

<210> 79
 <211> 283
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (9)..(9)
 <223> "n" is any nucleotide.

<220>
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 <222> (11)..(11)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (222)..(222)
 <223> "n" is any nucleotide.

<220>

<221> misc_feature
 <222> (231)..(231)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (262)..(262)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (267)..(267)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (274)..(274)
 <223> "n" is any nucleotide.

<400> 79
 ttgagtgtng naggcggcga gggcgcgagt gaggagcaga cccaggcatc gcgcgccgag 60
 aaggccgggc gtccccacac tgaaggtccg gaaaggcgac ttccgggggc tttggcacct 120
 ggccggaccct cccggagcgt cggcacctga acgcgaggcg ctccattgcg cgtgcgtttg 180
 aggggcttcc cgcacctgat cgcgagaccc caacggctgg tngcgtcgct ncgcgtctcg 240
 gctgagcttg gccatggcgc antgttnccg gctnaggcgg acg 283

<210> 80
 <211> 423
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (44)..(44)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (46)..(46)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (76)..(76)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (114)..(114)

<223> "n" is any nucleotide.

<220>

<221> misc_feature

<222> (187)..(187)

<223> "n" is any nucleotide.

<220>

<221> misc_feature

<222> (268)..(268)

<223> "n" is any nucleotide.

<220>

<221> misc_feature

<222> (309)..(309)

<223> "n" is any nucleotide.

<220>

<221> misc_feature

<222> (317)..(317)

<223> "n" is any nucleotide.

<220>

<221> misc_feature

<222> (332)..(332)

<223> "n" is any nucleotide.

<220>

<221> misc_feature

<222> (370)..(370)

<223> "n" is any nucleotide.

<400> 80

ggcgacctcc ggcggttggg aggtgtagcg cgctctgaac gggngangggc cggtgagtgt 60

cgcaggcggc agggcngagt gaggagcaga cccaggcatc ggcgcgccgag aagncggggcg 120

tccccacact gaaggtccgg aaaggcgact tccgggggct ttggcacctg gcggacgtcc 180

cggagcnggc acctgaacgc gaggcgctcc attgcgcgtg cgtttgaggg gcttcccgca 240

cctgatcgcg agaccccaac ggctggtngc gtcgctggcg cgttctcggc tgagctggcc 300

atggcgcant gttgcgngct gaggcggacc gncgtttttc ttcgccttgc tgggattcgc 360

ttgcttcttn tctggggggtt cctgggcggc cgaccgagaa cgcagcatcc aagaattttt 420

gcc 423

<210> 81

<211> 344

<212> DNA

<213> Homo sapiens

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<220>
<221> misc_feature
<222> (35)..(35)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (148)..(148)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (235)..(235)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (261)..(261)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (272)..(272)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (293)..(293)
<223> "n" is any nucleotide.

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<220>
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<222> (300)..(300)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (313)..(313)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (320)..(320)
<223> "n" is any nucleotide.

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<400> 81
ggaggagcag acccagggcat cgcgcgccga gaagncgggc gtccccacac tgaaggtccg      60
gaaaggcgac ttccggggggc tttggcacct ggcggaccct cccggagcgt cggcacctga      120
acgcgaggcg ctccattgcg cgtgcgtntg gaggggcttc ccgcacctga tcgcgagacc      180

```

```

ccaacggctg gtgggcgtcg ctgcgcgtct tcggctgagc tgggccatgg cgcanttgtt      240
gcgggctgag gcggacgcgg ncgttttttc gnccttgctg ggattcggtg ttctctctn      300
ggggttctgg ggnngccgan cgagaacgca agcattcacg attt                        344

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<210> 82
<211> 253
<212> DNA
<213> Homo sapiens

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<220>
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<222> (56)..(56)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (137)..(137)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (145)..(145)
<223> "n" is any nucleotide.

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<220>
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<222> (159)..(159)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (233)..(233)
<223> "n" is any nucleotide.

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<400> 82
ggaccctccc ggagcgtcgg cacctgaacg cgaggcctcc attgcggtgc gtgtgnaggg      60
gcttcccgca cctgatcgcg agacccaac ggctggtggc gtcgctgcgc gtctcggctg      120
agctggccat ggcgcantgt tgcgngctga ggcggcggnc gttttctcgc ctgctgggat      180
cgctgctcct ctctggggtc ctggcggccg accgagaacg cagcatccac ganttcctcc      240
tggtgttcga agg                                                    253

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<210> 83
<211> 419
<212> DNA
<213> Homo sapiens

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<220>

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<221> misc_feature
<222> (20)..(20)
<223> "n" is any nucleotide.

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<220>
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<222> (26)..(26)
<223> "n" is any nucleotide.

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<220>
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<222> (95)..(95)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (292)..(292)
<223> "n" is any nucleotide.

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<220>
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<222> (313)..(315)
<223> "n" is any nucleotide.

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<400> 83
ttagcgcggc tctgaacgcn agaagnggcc gttgagtgtc gcaggcggcg agggcgcgag      60
tgaggagcag acccagggcat cgcgcgccga gaagncgggc gtccccacac tgaagggtccg      120
gaaaggcgac ttccgggggc tttggcacct ggcgggacct cccggagcgt cggcacctga      180
acgcgaggcg ctccattgcg cgtgcgtttg aggggcttcc cgcacctgat cgcgagaccc      240
caacggctgg tggcgctgcc tgcgcgtctc ggctgagctg gccatggcgc antggtgcgg      300
gcttgaggcg gannngccgt ttctcgcttg ctgggatcgc tgctcctctc tggggtcctg      360
gcggccgacc gagaacgcag catccacgac ttctgcctgg tgtcgaaggt ggtgggcag      419

```

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<210> 84
<211> 477
<212> DNA
<213> Homo sapiens

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<220>
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<222> (27)..(27)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (139)..(139)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (223)..(223)
<223> "n" is any nucleotide.

<220>
<221> misc_feature
<222> (232)..(232)
<223> "n" is any nucleotide.

<220>
<221> misc_feature
<222> (302)..(302)
<223> "n" is any nucleotide.

<220>
<221> misc_feature
<222> (310)..(310)
<223> "n" is any nucleotide.

<220>
<221> misc_feature
<222> (322)..(322)
<223> "n" is any nucleotide.

<220>
<221> misc_feature
<222> (328)..(328)
<223> "n" is any nucleotide.

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<222> (357)..(357)
<223> "n" is any nucleotide.

<220>
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<222> (375)..(375)
<223> "n" is any nucleotide.

<220>
<221> misc_feature
<222> (392)..(392)
<223> "n" is any nucleotide.

<220>
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<222> (398)..(398)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (405)..(405)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (427)..(427)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (437)..(437)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (449)..(449)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (458)..(458)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (474)..(474)
<223> "n" is any nucleotide.

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<400> 84
agacccaggc atcgcgcgcc gagaagnccg gcgtccccac actgaagggtc cggaaaggcg      60
acttccgggg gctttggcac ctggcggacc ctcccgagac gtcggcacct gaacgcgagg      120
cctccattgc cgtgcgttng aggggcttcc cggaacttga tcgcgagacc ccaacggctg      180
gtggcgctgc tgcgcgtcct cggctgagct ggccatggcg cantggtgcc gngctgaggg      240
cggaggggcc gtttctcgcc ttgctgggat cgctgctcct ctctgggggtc ctggcggccg      300
ancgaagaan gcagcaatcc angaattnct gcctggtggt cgaaagttgg tgggcanatt      360
ccggggcctt catgnctaag gttggttggt anaatgtnaa ttaangattc ttgcaactgt      420
ttgtgtnatt ggggctntta aacggaaana caataatnac ctgaccaaag aagnaatt      477

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<210> 85
<211> 393
<212> DNA
<213> Homo sapiens

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<220>
<221> misc_feature

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<222> (361)..(361)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (367)..(367)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (384)..(384)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (390)..(390)
 <223> "n" is any nucleotide.

<400> 85
 ggccgggtcg tttctcgctt ggctgggata gctgctctc tctgggggtcc tggccggccg 60
 accgagaacg cagcatccac gacttctgcc tgggtgtcgaa ggtgggtgggc agattccggg 120
 cctccatgcc taggtggtgg tacaatgtca ctgacggatc ctgccagctg tttgtgtatg 180
 ggggctgtga cggaaacagc aataattacc tgaccaagga ggagtgcctc aagaaatgtg 240
 ccactgtcac agagaatgcc acgggtgacc tggccaccag caggaatgca gcggattcct 300
 ctgtcccaag tgctccaga aggaggatt cttgaagacc acttcagcga tatgtttcaa 360
 ntattgnaag aataattgca ccgncacgn att 393

<210> 86
 <211> 428
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (3)..(3)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (11)..(12)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (17)..(17)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (48)..(48)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (425)..(425)
 <223> "n" is any nucleotide.

<400> 86
 gcngcgcgtt nntcgcntgc tgggatcgct gcacctctct ggggtcgngg cggccgaccg 60
 agaacgcagc atccacgact tctgcctggg gtcgaagggt gtgggcagat gccgggcctc 120
 catgcctagg tgggtggtaca atgtcactga cggatcctgc cagctgtttg tgtatggggg 180
 ctgtgacgga aacagcaata attacctgac caaggaggag tgcctcaaga aatgtgccac 240
 tgtcacagag aatgccacgg gtgacctggc caccagcagg aatgcagcgg attcctctgt 300
 cccaagtgtc ccagaaggc aggattctga agaccactcc agcgatatgt tcaactatga 360
 agaatactgg caccgccaac gcattcactg ggcttgcgtg catccttccc acgctgggtac 420
 tttgncgt 428

<210> 87
 <211> 425
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (7)..(7)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (403)..(403)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (409)..(409)
 <223> "n" is any nucleotide.

<400> 87
 ctgggantcg ctgctcctct ctggggtcct ggcggccgac cgagaacgca gcatccacga 60
 cttctgcctg gtgtcgaagg tgggtgggcag atgccggggc tccatgccta ggtggtggta 120
 caatgtcact gacggatcct gccagctgtt tgtgtatggg ggctgtgacg gaaacagcaa 180
 taattacctg accaaggagg agtgcctcaa gaaatgtgcc actgtcacag agaatgccac 240

```

gggtgacctg gccaccagca ggaatgcagc ggattcctct gtcccaagtg ctcccagaag      300
gcaggattct gaagaccact ccagcgatat gttcaactat gaagaatact gcaccgccaa      360
cgcagtcact ggggccttgc gtggaatcct ttcccacgct ggnaatttng acgttgagaa      420
ggaac                                                                    425

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<210> 88
<211> 343
<212> DNA
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (48)..(48)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (62)..(62)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (211)..(211)
<223> "n" is any nucleotide.

```

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<220>
<221> misc_feature
<222> (232)..(232)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (245)..(245)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (309)..(309)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (318)..(318)
<223> "n" is any nucleotide.

```

```

<400> 88
gattcgccac aggggaaaca gcaataatta cctgaccaag gaggagtncc tcaagaaatg      60
tnccactgtc acagagaatg ccacgggtga cctggccacc agcaggaatg cagcggattc      120

```

```

ctctgtccca agtgctccca gaaggcagga ttctgaagac cactccagcg atatgttcaa 180
ctatgaagaa tactgcaccg ccaacgcagt nactggggcc ttgcgtggca tnccttccca 240
cgctngtact ttgacgtgga gaggaactcc tggcaataac ttcatttatg gaggcttgcc 300
ggggcaatna agaacagntt accgctcttt aggaggcctg cat 343

```

```

<210> 89
<211> 510
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (424)..(424)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (481)..(481)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (509)..(509)
<223> "n" is any nucleotide.

```

```

<400> 89
gcaataatta cctgaccaag gaggagtgcc tcaagaaatg tgccactgtc acagagaatg 60
ccacgggtga cctggccacc agcaggaatg cagcggattc ctctgtccca agtctcccag 120
aaggcaggat tctgaagacc actccagcga tatgttcaac tatgaagaat actgcaccgc 180
caacgcagtc actgggcctt gccgtgcac cttcccacgc tggctactttg acgtggagag 240
gaactcctgc aataacttca tctatggagg ctgccggggc aataagaaca gctaccgctc 300
tgaggaggcc tgcattgtcc gctgcttccg ccagcaggag aatcctcccc tgccccttgg 360
ctcaaagggtg gtgggttctgg ccggggctgt ttcgtgatgg tgttgatcct tttcctgggg 420
agcttccatg gtcttactga ttccgggtgg caaggaggaa ccaggagcgt gccctgcgga 480
ncgtctggag cttcggagat gacaagggnt 510

```

```

<210> 90
<211> 293
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (257)..(257)

```

<223> "n" is any nucleotide.

```

<400> 90
gctaccgctc tgaggaggcc tgcattgctc gctgcttccg ccagcaggag aatcctcccc      60
tgcccccttg ctcaaagggt gtggttcttg cggggctggt cgtgatggtg ttgatcctct      120
tcctggggag cctccatggt ctacctgac cgggtggcac ggaggggaacc agggagcgtg      180
ccctgcgcac cgtctgggag ctccggagat gacaaggag cagctgggtg aagaacacat      240
atgttctctg tgaccgnct gtccgccaag aggattgggg gaaggagggg gga                293

```

```

<210> 91
<211> 282
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (19)..(19)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (147)..(147)
<223> "n" is any nucleotide.

```

```

<400> 91
ttccgccaag caggaaaant cctccccctc cccttggttc aaaggtggtg gttcctggcg      60
gggctgttcg tgatggtggt gatccctcct tcccgggagc ctcccatggt cctaccctga      120
tccgggtggc acggaggaac ccaggancgt gccctgcgca ccgtctggag ctccggagat      180
gacaaggagc agctggtgaa gaacacatat gtcctgtgac cgccctgtcg ccaagaggac      240
tggggaaggg aggggagact atgtgtgagc tttttttaa ta                          282

```

```

<210> 92
<211> 390
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (33)..(33)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (55)..(55)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (118)..(118)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (213)..(213)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (228)..(228)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (259)..(259)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (267)..(267)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (324)..(324)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (333)..(333)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (344)..(344)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (387)..(387)
<223> "n" is any nucleotide.

```

```

<400> 92
gagaggaact cctgcaataa cttcatctat ggnggctgcc ggggaataag aacantacc      60
gctctgagga ggctgcggtg ctccgctgct tccgctgtgt gttctcttcc aggccagcag      120
gagaatcctc ccctgccctc tggctcaaag gtggtggttc tggcggggct gttcgtgatg      180

```

```

gtgttgatcc tcttcctggg agcctccatg gtntacctga tccgggtngc acggaggaac 240
cagggagcgt gccctgcgna ccgtctngga gctccggaga tgacaaggag cagctggtga 300
agaacacata tgtcctgtga ccgncctgtt cgncaagagg actnggggaa aggggagggg 360
agattatgtg ttgagttttt tttaaantag 390

```

```

<210> 93
<211> 406
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (306)..(306)
<223> "n" is any nucleotide.

```

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<220>
<221> misc_feature
<222> (328)..(328)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (342)..(342)
<223> "n" is any nucleotide.

```

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<220>
<221> misc_feature
<222> (365)..(365)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (370)..(370)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (377)..(377)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (382)..(382)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (402)..(402)
<223> "n" is any nucleotide.

```

```

<400> 93
gattcgggaac gaggagccgg ggcaataaga acagctaccg ctctgaggag gcctgcatgc      60
tccgctgctt ccgccagcag gagaatcctc ccctgcccct tggctcaaag gtggtgggttc      120
tggcgggggt gtctcgtgatg gtgttgatcc tcttcctggg agcctccatg gtctacctga      180
tccgggtggc acggaggaac caggagcgt gccctgcgca ccgtctggga gctccggaga      240
tgacaaggga gcagctggtg aagaacacat atgttcctgt tgaccgccct gttcgccaag      300
agggantggg ggaaggggag ggggaganta ttgttgttga gntttttttt aaaattagga      360
ggggnttgan ttcgggnttt tnagttgatc catttagggg gntgag                        406

```

```

<210> 94
<211> 360
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)..(1)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (142)..(142)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (339)..(339)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (347)..(347)
<223> "n" is any nucleotide.

```

```

<400> 94
nggccttgca gtgtccgct gttccgcca gcaggagaat cctcccctgc cccttggtc      60
aaaggtggtg gttctggcgg ggctgttcgt gatggtgttg atcctcttcc tgggagcctc      120
catggtctac ctgatccggg tngcacggag gaaccaggag cgtgccctgc gcaccgtctg      180
gagctccgga gatgacaagg agcagctggt gaagaacaca tatgtcctgt gaccgccctg      240
tcgccaagag gactggggaa gggaggggag actatgtgtg agcttttttt aaatagaggg      300
attgactcgg atttgagtga tcattagggc tgaggtctnt ttctctngga ggtaggacga      360

```

```

<210> 95

```

<211> 438
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (334)..(334)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (368)..(368)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (376)..(376)
 <223> "n" is any nucleotide.

<400> 95
 cggggctggt cgtgatggtg ttgatcctct tcttgggagc ctccatgggc tacctgatcc 60
 ggggtggcacg gaggaaccag gacgctgccc tgcgcaccgt ctggagctcc ggagatgaca 120
 aggagcagct ggtgaagaac acatatgtcc tgtgaccgcc ctgtcgccaa gaggactggg 180
 gaagggaggg gagactatgt gtgagctttt tttaaataga gggattgact cggatttgag 240
 tgatcattag ggctgaggtc tgtttctctg ggaggtagga cggctgcttc ctgggtcttg 300
 gcagggatgg ggtttgcttt gggaaatcct cttnnggagc tcctccttcg catgggcctt 360
 gcagtctnng cagcancccc cgagtttttt tccttcgctg atccgatttc ttttcctcca 420
 ggtaagaatt tttctttt 438

<210> 96
 <211> 448
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (108)..(108)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (261)..(261)
 <223> "n" is any nucleotide.

<400> 96
 gggaaccagg agcgtgccct gcgcaccggt ctggagctcc ggagatgaca aggagcagct 60
 ggtgaagaac acatatgtcc tgtgaccgcc ctgtcgccaa gaggactnng gaagggaggg 120

```

gagactatgt gtgagctttt tttaaataga gggattgact cggatttgag tgatcattag      180
ggctgaggtc tgtttctctg ggaggtagga cggctgcttc ctggtctggc agggatgggt      240
ttgctttgga gaatcctcta ngaggctcct cctcgcatgg cctgcagtct ggcagcagcc      300
ccgagttggt tcctcgctga tcgatttctt tcctccaggt agagttttct ttgcttatgt      360
tgaattccat tgccctcttt ctcacacag aagtgatggt ggaatcgttt cttttgtttt      420
gtctgattta tgggtttttt ttaagtat                                     448

```

```

<210> 97
<211> 331
<212> DNA
<213> Homo sapiens

```

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<220>
<221> misc_feature
<222> (20)..(20)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (30)..(30)
<223> "n" is any nucleotide.

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<400> 97
attagggctg aggtctgttn ctctgggagn taggacggct gccttcctgg tctggcaggg      60
atggggtttgc tttggaaatc ctctaggagg ctctcctcgc catggcctgc agttctgcag      120
cagccccgag ttgtttcctc gctgatcgat ttctttcctc caggtagagt tttctttgct      180
tatgttgaat tccattgcct cttttctcat cacagaagtg atgttggaat cgtttctttt      240
gtttgtctga tttatggttt ttttaagtat aaacaaaagt tttttattag cattctgaaa      300
gaaggaaagt aaaatgtaca agtttaataa a                                     331

```

```

<210> 98
<211> 373
<212> DNA
<213> Homo sapiens

```

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<220>
<221> misc_feature
<222> (45)..(45)
<223> "n" is any nucleotide.

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<220>
<221> misc_feature
<222> (102)..(102)
<223> "n" is any nucleotide.

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<220>
 <221> misc_feature
 <222> (105)..(105)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (159)..(159)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (174)..(174)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (213)..(213)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (337)..(337)
 <223> "n" is any nucleotide.

<400> 98
 gattgactcg gatttgagtg atcattaggg ctgaggtctg tttcnctggg aggtaggacg 60
 gctgctcccc tgggtctggca gggatggggtt tgctttggaa anccnctagg aggctcctcc 120
 tcgcatggcc tgcagtctgg cagcagcccc gagttgttnc ctcgctgatc gatntctttc 180
 ccccaggtag agttttcttt gcttatgttg aantccattg cctcttttct catcacagaa 240
 gtgatgttgg aatcgtttct tttgtttgtc tgatttatgg tttttttaag tataaacaaa 300
 agttttttat tagcattctg aaagaaggaa agtaaantgt acaagtttaa taaaaagggg 360
 ccttcccctt taa 373

<210> 99
 <211> 380
 <212> DNA
 <213> Homo sapiens

<400> 99
 gattgactcg gatttggagt gatcattagg gctgaggtct gtttctctgg gaggtaggac 60
 ggctgcttcc tgggtctggca gggatggggtt tgctttggaa atcctctagg aggctcctcc 120
 ttgcgatggc ctgcagtctg gcagcagccc cgagttgttt cctcgtgat cgatttcttt 180
 cctccaggta gagttttctt tgcttatgtt gaattccatt gcctcttttc tcatcacaga 240

```

agtgatgttg gaatcgtttc ttttgtttgt ctgatttatg gtttttttaa gtataaacia 300
aagtttttta ttagcattct gaaagaagga aagtaaatg tacaagtta ataaaaaggg 360
gccttccctt ttagaataaa 380

```

```

<210> 100
<211> 320
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (304)..(304)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (309)..(309)
<223> "n" is any nucleotide.

```

```

<400> 100
tctggcaggg atggggttgc tttggaaatc ctctaggagg ctctcctcg catggcctgc 60
agtctggcag cagcccgagt tgtttcctcg ctgatcgatt tctttcctcc aggtagagtt 120
ttctttgctt atgttgaatt ccattgcctc ttttctcatc acagaagtga tgttggaaac 180
gtttcttttg tttgtctgat ttatggtttt tttaagtata aacaaaagtt ttttattagc 240
attctgaaag aaggaaagta aaatgtacaa gtttaataaa aaggggcctt cccctttagg 300
aatnaaaana aaaaagggtg 320

```

```

<210> 101
<211> 397
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (24)..(24)
<223> "n" is any nucleotide.

```

```

<400> 101
gattgactcg gatttgagtg atcnattagg gctgaggtct gtttctctgg gaggtaggac 60
ggctgcttca tgggtctggca gggatggggt tgctttggaa atcctctagg aggctcctcc 120
tcgcatggcc tgcagtctgc agcagccccg agttgtttcc tcgctgatcg atttctttcc 180
tccaggtaga gttttctttg cttatgttga attccattgc ctcttttctc atcacagaag 240
tgatgttgga atcgtttctt ttgtttgtct gatttatggg ttttttaagt ataaacaaaa 300
gttttttatt agcattctga aagaaggaaa gtaaaatgta caagtttaat aaaaaggggc 360

```

cttcccccttt agaataaaatt tcagcatgtg ctttcaa

397

<210> 102
 <211> 289
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (61)..(61)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (74)..(74)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (122)..(122)
 <223> "n" is any nucleotide.

<220>
 <221> misc_feature
 <222> (184)..(184)
 <223> "n" is any nucleotide.

<400> 102
 gaggtcctc ctcgcatggc ctgcagtctt ggcagcagcc ccgagttgtt tcctcgctga 60
 ncgatttctt tccnccaggt agagttttct ttgcttatgt tgaattccat tgccctctttt 120
 cncatcacag aagtgatgtt ggaatcgttt cttttgtttg tctgatttat gggttttttta 180
 agtntaaaca aaagtttttt attagcattc tgaaagaagg aaagtaaaat gtacaagttt 240
 aataaaaagg ggccttcccc tttagaataa aaaaaaaaaa aaaaaaaaaa 289

<210> 103
 <211> 311
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (7)..(7)
 <223> "n" is any nucleotide.

<400> 103
 cttttgnaaa tcctctagga ggctcctcct cgcattggcct gcagtctgca gcagccccga 60
 gttgtttcct cgctgatcgg atttccttcc tccaggtaga gttttctttg cttatgttga 120

```

attccattgc ctcttttctc atcacagaag tgatgttgga atcgtttctt ttgtttgtct 180
gatttatggg ttttttaagt ataaacaaaa gttttttatt agcattctga aagaaggaaa 240
gtaaaatgta caagtttaat aaaaaggggc cttccccttt agaataaatt tcagcatgtg 300
ctttcaaaaa a 311

```

```

<210> 104
<211> 338
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (32)..(32)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (67)..(67)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (136)..(136)
<223> "n" is any nucleotide.

```

```

<400> 104
ggctctggcag ggatggggtt gcctttggaa ancctctagg aggctcctcc tcgcatggcc 60
tgcagtnctg gcagcagacc ccgagttgtt tcctcgctga tcgatttctt taccgccagg 120
tagagttttc ctttgnctta tgttgaattc cattgcctct tttactcatc acagaagtga 180
tgttggaatc gtttcttttg tttgtctgat ttatggtttt ttttaagtata aacaaaagtt 240
ttttattagc attctgaaag aaggaaagta aaatgtacaa gtttaataaa aaggggcctt 300
cccctttaga ataaaaaaaa aaaaaaaaaa aaaaaaaaa 338

```

```

<210> 105
<211> 343
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (13)..(13)
<223> "n" is any nucleotide.

```

```

<220>
<221> misc_feature
<222> (19)..(19)
<223> "n" is any nucleotide.

```

<220>
 <221> misc_feature
 <222> (107)..(107)
 <223> "n" is any nucleotide.

<400> 105
 ccctgggtcc tgncaaggna tggggtttgc tttggaaatc ctcttaggag gctcctcctc 60
 gcatggcctg cagtctggca gcagccccga gttgtttcct cgtgancga tttctttcct 120
 ccaggtagag ttttctttgc ttatgttgaa ttccattgcc tcttttctca tcacagaagt 180
 gatgttgaa tegtctcttt tgtttgtctg atttatgggt tttttaagta taaacaaaag 240
 tttttatta gcattctgaa agaaggaaag taaaatgtac aagtttaata aaaaggggcc 300
 ttccccttta gaataaaaaa aaaaaaaaaa aaaaaaaaaa aaa 343

<210> 106
 <211> 4
 <212> PRT
 <213> Homo sapiens

<400> 106

Leu Gly Ser Lys

1